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Leadership to Promote Patient Safety Culture and Learning in Critical Care

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KEY IMPLICATIONS FOR DECISION MAKERS

- Hospital decision makers and policy developers can use the evidence from this study to develop a greater understanding of the complexities of the critical care environment, and to explore the ways in which safety culture and improved safety outcomes may be achieved through clinical leadership
- The safety culture in critical care is described as a pervasive and uncomfortable tension between patient safety threats that are linked to provider knowledge and experience, and those linked to workplace conditions.
- The most commonly reported threats to patient safety in the critical care practice environment reported by all provider stakeholder groups include patient acuity, inadequate physical environment, and insufficient human and technological resources.
- Interdisciplinary teamwork and professional scope of practice are dynamic, and can be seen as either a threat to patient safety or an opportunity for improving safety outcomes.
- There is a need to balance deference to expertise with the burden experienced by senior nurses.
- Work is required to clarify scope of practice, practice standards, competencies, and skill base of team members in the context of professional accountability.
- Work is required to understand the support required by clinical leaders (i.e. expert nurses in charge on daily basis) to help them make decisions that promote the delivery of safe care.
- Work is required to help direct care providers develop a more comprehensive understanding of the dynamic nature of patient safety in their work environment and to manage the paradoxes of accountability in ways that will keep operations at a safe point.

EXECUTIVE SUMMARY

Creating practice environments in which nurses can engage in the delivery of “safe care” is a challenge for today’s nurse leaders. Moreover, recent evidence suggests that error and adverse events are especially common in critical care^{1,2,3} and that “good management” contributes to improved patient outcomes⁴. Improvements in multidisciplinary teamwork and information technology are important strategies to improve patient safety; however, it has been suggested that these initiatives will fail in the absence of a safety culture^{5,6}. Focusing attention on the relationship between the quality of the work environment (safety culture) and safety outcomes is important work of nursing leaders. While many have argued that the creation of a safety culture is the key to reducing error in health care⁷, there is a lack of evidence to assist managers and policy makers in making important decisions about how to influence cultural change and how to link culture to improved patient outcomes⁸. In addition, despite general agreement that health care leaders provide the infrastructure and momentum required to fuel cultural change in the practice setting so that patient safety issues are perceived and acted on throughout the organization⁹, there is still limited systematic evidence about how leaders establish safety cultures.

The primary purpose of this study was to explore ways in which the safety culture of the critical care practice environment influences the delivery of safe patient care. This study was unique in that it explored the perceptions of multiple direct care providers (e.g. nurses, physicians, allied health and nurse leaders) simultaneously, as a means of maximizing knowledge about critical care teamwork and the role of nursing leaders in transforming the safety culture.

A grounded theory approach was used to develop and inductively derive a model of patient safety culture in critical care. The study was conducted in six acute care teaching hospitals in Ontario and took place in three phases. In phase 1, best practices and exemplary leader behaviors associated with the creation of safety culture were identified. In phase 2, current threats to the safety of patients and contextual factors that characterize patient safety culture in the critical care practice environment were identified. In phase 3, nurse leaders and other stakeholders identified and prioritized opportunities for leadership and improvement to influence critical care safety culture and improve safety outcomes.

Study findings indicate that the four provider groups have convergent and divergent perspectives of the culture of patient safety. The findings suggest substantial overlap between the four provider groups in their perceptions of the contextual factors that influence their ability to provide safe patient care. The most commonly reported threat to patient safety reported by all groups included inadequate physical space, lack of isolation capabilities, inappropriate hand washing facilities, the lack of equipment, equipment failure and non-standardized equipment, and medication shortages. In addition, a number of operational issues threaten patient safety, including: heavy workload; staff shortages; agency nurses; frequent rotation of residents; the presence of internationally educated physicians; the rapid rate of clinical innovations; administrative delays; challenges of keeping up with changing knowledge; and the challenge of balancing teaching and practice. A key issue is the rapid cycle of patients in and out of critical care and the pressure to discharge patients quickly, and potentially, prematurely.

Findings suggest divergent perspectives around the role of teamwork and scope of practice in relation to patient safety. The most notable difference relates to the role of Allied Health, who are “second string” players (as seen through the metaphor of a sports team). Concerns were expressed about the balance between professional accountability and professional scope of practice. In addition, teamwork and scope of practice are dynamic in nature, and can be seen as either a threat to patient safety or an opportunity for improving safety outcomes. Finally, a key issue is the need to balance deference to expertise with the burden experienced by senior nurses.

This project furthers our understanding of the complexities of the critical care environment and explores the ways in which safety culture and improved safety outcomes may be achieved through clinical leadership. A key theme emerging from this research is the pervasive and uncomfortable tension between patient safety threats that are linked to provider knowledge and experience, and those linked to workplace conditions. There was agreement among the provider groups that improvements were needed in interdisciplinary communication, increased respect and value for professional contribution, greater understanding of the roles and responsibilities of the team members, and shared mental models of patient goals. In addition, substantial work is required to clarify scope of practice, practice standards, competencies, and skill base of team members in the context of professional accountability.

This research focused uniquely on critical care practice in teaching hospitals, and findings may not apply to the same extent in community hospitals. More research is needed to determine whether the issues identified in this study also apply in other sectors. In addition, the perspectives of patients and families were not explored; further research is required to understand the perspectives of this stakeholder group.

Other questions to be explored through subsequent research include 1) What supports are needed for expert critical care nurses who are burdened by the need for them to support junior nurses and junior physicians? 2) What changes are needed to promote understanding of professional roles and interdisciplinary teamwork in critical care? 3) What information and supports do clinical leaders (i.e. expert nurses in charge on a daily basis) need to help them make decisions that promote the delivery of safe care? 4) How do direct care providers learn to develop a more comprehensive understanding of their work environment and manage the paradoxes of accountability in ways that will keep the operating point safe?

CONTEXT

PATIENT SAFETY CULTURE

Creating practice environments in which nurses can engage in the delivery of “safe care” is a challenge for today’s nurse leaders. Moreover, recent evidence suggests that error and adverse events are especially common in critical care^{1,2,3} and that “good management” contributes to improved patient outcomes⁴. Improvements in multidisciplinary teamwork and information technology are important strategies to improve patient safety; however, it has been suggested that these initiatives will fail in the absence of a safety culture^{5,6}. Focusing attention on the relationship between the quality of the work environment (safety culture) and safety outcomes is important work of nursing leaders. While many have argued that the creation of a safety culture is the key to reducing error in health care⁷, there is a lack of evidence to assist managers and policy makers in making important decisions about how to influence cultural change and how to link culture to improved patient outcomes⁸. In addition, despite general agreement that health care leaders provide the infrastructure and momentum required to fuel cultural change in the practice setting so that patient safety issues are perceived and acted on throughout the organization⁹, there is still limited systematic evidence about how leaders establish safety cultures.

ORGANIZATIONAL ACCIDENT MODEL

Reason’s¹⁰ Organizational Accident Model, which identifies two forms of safety failures (active and latent), is widely advocated as a framework to analyze actual and potential safety breaches, and identify remedies. Active failures are unsafe acts made by practitioners at the “sharp” end of the system. Examples of active failures in nursing practice include errors of judgment in staff delegation, inadequate experience, and failure to anticipate potential problems, slips and lapses¹¹. In contrast, latent failures are management decisions that influence the conditions in which unsafe acts may occur. Examples of latent failures in nursing management include work overload, stressful atmosphere, and lack of communication and support from senior staff¹². However, in complex sociotechnical systems like critical care, there is an uncomfortable tension between accidents that are linked to provider knowledge and experience, and those linked to workplace conditions.

RESEARCH QUESTIONS

In the present study, we explored the ways in which the critical care practice environment contributes to, or prevents, the delivery of safe patient care. Perceptions among critical care providers regarding the culture of safety in their practice environments were explored and consideration was given to potential solutions and strategies for improvement. Research questions were:

- 1) What are the best practices to maximizing safety culture in the critical care practice environment?
- 2) What are the contextual barriers or facilitators to maximizing safety culture in the critical care practice environment?
- 3) What factors in the practice environment support or fail to support safe care and do these perspectives vary by provider group (e.g. nurse, physicians etc)?
- 4) What factors in the practice environment influence error/near miss disclosure and learning and do these perspectives vary by provider group (e.g. nurse, physicians etc)?
- 5) What leadership behaviors can be enacted to create a practice environment that promotes a culture of patient safety and learning?

CONTRIBUTION OF THIS RESEARCH

This project furthers our understanding of the complexities of the critical care environment and explores the ways in which safety culture and improved safety outcomes may be achieved through clinical leadership. A key theme emerging from this research is the pervasive and uncomfortable tension between patient safety threats that are linked to provider knowledge and experience and those linked to workplace conditions. Further, teamwork and scope and/or standards of practice emerged as both a threat to patient safety, and as an opportunity to enhance patient safety outcomes. There was agreement among the provider groups that improvements were needed in interdisciplinary communication, increased respect and value for professional contribution, greater understanding of the roles and responsibilities of the team members, and shared mental models of patient goals. In addition, substantial work is required to clarify scope of practice, practice standards, competencies, and skill base of team members in the context of professional accountability.

KEY MESSAGES AND IMPLICATIONS

- Hospital decision makers and policy developers can use the evidence from this study to develop a greater understanding of the complexities of the critical care environment and to explore the ways in which safety culture and improved safety outcomes may be achieved through clinical leadership.
- The safety culture in critical care is described as a pervasive and uncomfortable tension between patient safety threats that are linked to provider knowledge and experience and those linked to workplace conditions.
- The most commonly reported threats to patient safety in the critical care practice environment reported by all provider stakeholder groups include patient acuity, inadequate physical environment, and insufficient human and technological resources.
- Interdisciplinary teamwork and professional scope of practice are dynamic, and can be seen as either a threat to patient safety or an opportunity for improving safety outcomes.
- There is a need to balance deference to expertise with the burden experienced by senior nurses.
- Work is required to clarify scope of practice, practice standards, competencies, and skill base of team members in the context of professional accountability.
- Work is required to understand the support required by clinical leaders (i.e. expert nurses in charge on daily basis) to help them make decisions that promote the delivery of safe care.
- Work is required to help direct care providers develop a more comprehensive understanding of the dynamic nature of patient safety in their work environment and to manage the paradoxes of accountability in ways that will keep operate at a safe point.

APPROACH

METHODS

A grounded theory approach was used to develop and inductively derive a model of patient safety culture in critical care. Ethics approval for the study was obtained from the research ethics board of the researchers' universities as well as from the six participating sites. The study had three phases. In phase 1, best practices and exemplary leader behaviors associated with the creation of safety culture were identified. In phase 2, current threats to the safety of patients and contextual factors that characterize patient safety culture in the critical care practice environment were identified. In phase 3, nurse leaders and other stakeholders identified and prioritized opportunities for leadership and improvement to influence critical care safety culture and improve safety outcomes.

STUDY SETTING

The study was conducted in six acute care teaching hospitals in Ontario. For the purpose of this study, critical care was understood as the provision of constant, complex, detailed health care for patients in various acute life-threatening conditions (e.g. burn unit, coronary care unit, medical and surgical intensive care unit, neurotrauma intensive care unit).

SAMPLE

In phase 1 of the study, 10 key informant interviews and site visits were conducted to identify and clarify leadership behaviors and contextual factors associated with patient safety cultural transformation. All participants were from acute care hospitals and included senior administrators, clinical program directors, quality and risk managers, and direct care providers. In phase 2, a total of 31 focus groups were conducted with 188 individuals in six teaching hospitals in Ontario. Focus groups were conducted in four cohorts, including: (1) registered nurses (n = 9); (2) nurse leaders (e.g. managers, advanced practice nurses, educators) (n = 10); (3) allied health direct care providers (e.g. physiotherapy, respiratory therapist, social work, chaplain, nutritionist etc.) (n = 7); and, (4) physicians (n = 5). On average, focus group participants had 16 years of healthcare work experience (range from 1 to 37 years) with an average of 10 of those years in the critical care work environment. Most participants were employed in full-time positions (65 percent) or regular part-time positions (25 percent), while about 10 percent were in temporary or casual positions. A total of 30 percent of the participants were registered nurses, 28 percent were nurse leaders, 27 percent were allied health professionals and 15 percent were physicians. In phase 3 of the study, a panel of critical care experts reviewed the findings and offered recommendations for future work.

ANALYSIS

Given the large number of focus groups conducted, a framework for coding was developed by two members of the research team, from thematic analysis from a small sample of focus groups. This structure was used to code the remainder of the transcripts. QSR NUD*IST computer software was used to facilitate analysis of the large volume of data. Consistent with qualitative methods, several iterations of the categories evolved over the period of analysis. An external expert in qualitative analysis conducted an audit of the coding.

RESULTS

RESEARCH QUESTION 1

WHAT ARE THE BEST PRACTICES TO MAXIMIZING SAFETY CULTURE IN THE CRITICAL CARE PRACTICE ENVIRONMENT?

Findings indicate that changing patient safety culture is a long-term undertaking, and one which requires active leadership at all managerial levels in the organization. Further, a sentinel event in an organization may provide the attention and support for changing patient safety culture. Key informants identified a number of practices to maximize safety culture in critical care, including: 1) early involvement of clinical providers (including the union) in patient safety activities and decision-making; 2) open communication and trust among team members; 3) creation of committee and staff positions dedicated to supporting patient safety activities, including the review of specific patient safety issues and improvement activities; 4) incentives for improved safety outcomes; and, 5) deepened understanding of the complexity of issues and responses, and respect for the challenges involved in improving patient safety and the culture of workplace.

RESEARCH QUESTION 2

WHAT ARE THE CONTEXTUAL BARRIERS OR FACILITATORS TO MAXIMIZING SAFETY CULTURE IN THE CRITICAL CARE PRACTICE ENVIRONMENT?

Barriers and Facilitators to Patient Safety

There was a tendency on the part of participants to refer to conditions in the work environment that threatened patient safety. The data on barriers and facilitators are therefore not separated in this report.

The Critical Care Environment

The context of critical care was by far the factor most commonly reported as a threat to patient safety. For example, a nurse manager began the focus group by stating:

“I will begin by saying I think one of the threats currently, and this is relatively new, is that the patients which we’re caring for and turnover and the acuity, our volumes are all higher and I have concern that the pace and the stress we now work under is a contributor to patient safety.”

Participants identified a number of structural factors that threaten patient safety, including: inadequate physical space; lack of isolation capabilities; inappropriate hand- washing facilities; the lack of equipment, equipment failure, and non-standardized equipment; medication shortages; and, the lack of technological support such as computerized physician order entry. Environmental security (i.e. uncontrolled access to the critical care unit by outsiders) was also identified as a threat to patient and staff safety.

“I’m thinking in the critical care unit we’ve had so many violent incidents and the worry and the concern of retaliation and people coming in to cause more harm in the unit by attacking patients or family members that are there. So it’s more of a security issue than a medical safety issue.” (Allied Health)

Human resource management was another environmental threat identified by study participants. Many respondents commented on demanding workloads and questioned the adequacy of nurse staffing, the availability of physicians, and the skill mix of nursing and medical staff. A related concern is the availability of resources for orientation, including orientation to new equipment and procedures, as well as ongoing clinical education. Overtime, fatigue, and shift work were also identified as threats to patient safety.

“I think numbers and overtime and sickness and fatigue are one of the big safety issues and being too tired and overworked to do those triple checks on the drugs that, you know, to not stop that physician from grabbing that syringe and saying ... and noticing, you know, hey stop, you are making a mistake..” (Registered Nurse).

In addition, a number of critical care operating practices were identified as threats to patient safety, including: frequent rotation of residents; the presence of internationally educated physicians; the rapid rate of clinical innovations; administrative delays; challenges of keeping up with changing knowledge; and, the challenge of balancing teaching and practice. A key issue was the rapid cycle of patients in and out of critical care and the pressure to discharge patients quickly, and sometimes prematurely.

“Upper management’s focus is get them in, get them in and don’t cancel surgery Where are we going to put all these patients when the ones we have are still really sick? Next we transfer people out that shouldn’t be and often readmit within 12 hours. We do that all the time now...” (Registered Nurse)

Finally, several participants noted change over time in increased levels of patient acuity and an increased complexity of care requirements as threats to patient safety. In addition, more patients require isolation, and are aggressive and agitated. Patient obesity is also seen as a threat to patient safety and staff safety.

“I’d like to add that in the last 10 years our patients are getting much bigger and lasting much longer than they were before. So when you’re looking at just the physical transfer of a patient from a bed to a chair like the complexities in the patients now is so high compared to before and, you know, there’s only been a couple of instances where I’ve told a nurse if you get him up you’re responsible, you’ll hurt your back and I’ll be the first one to say don’t do it. And it’s just happened occasionally where I think the standard is after a certain amount of time sitting on the edge of the bed you can’t get him up in a chair well there’s a couple of patients where their pre-existing conditions makes it that it’s very difficult already to get up in a chair. So it’s just ... the cases are more complex and some of the staff, depending on if they’re junior or senior, are not as aware of the complexity of the patient when it comes to transfers.” (Physician)

RESEARCH QUESTION 3

WHAT FACTORS IN THE PRACTICE ENVIRONMENT SUPPORT OR FAIL TO SUPPORT SAFE CARE AND DO THESE PERSPECTIVES VARY BY PROVIDER GROUP (E.G. NURSES, PHYSICIANS ETC.)?

Two factors in the practice environment that support or fail to support the delivery of safe critical care emerged from the research: teamwork and scope of practice.

Teamwork

All four categories of providers identified poor interdisciplinary communication as a major factor that fails to support patient safety. All provider groups described lack of feedback, poor physician-to-physician patient handoff, and lack of trust among team members as specific communication concerns. One participant noted,

“The lack of communication snowballs a problem and the next thing you know this person has had an incident after incident because no one was really communicating the honest truth of what happened.” (Allied Health).

There were, however, some clear differences among the provider groups with respect to other teamwork concerns. Allied Health professionals expressed concern that there is a lack of respect and value, especially among physicians, for their expertise and professional contribution. As stated by one participant,

“Our suggestions are not always accepted. You may suggest some type of diet, the physician feels otherwise, you’re the expert, and the physicians do what they want. There are some areas where they could accept more input.” (Allied Health)

Registered nurses also spoke about the lack of professional respect and value expressed toward them by some of their physician colleagues (residents and fellows more than staff physicians). Registered nurses also commented that junior nurses may be afraid to ask questions or seek help.

“I think there’s an issue with some of the learning with some of the younger nurses who don’t feel comfortable asking for help. The perception is that if you’re asking for help you’re inadequate or that you will be looked down on. So there’s team-building issues that also contribute to patient safety or a lack of patient safety if people don’t feel comfortable asking questions.” (Registered Nurse)

It is also clear from the research that experienced nurses are overwhelmed, and potentially burdened with responsibilities to oversee the work of less experienced colleagues. In most cases, this burden is experienced when expert nurses are working with junior nurses and/or with junior physicians –

“Sometimes, you know, really junior residents at the bedside we’re watching put in lines and stuff and there’s no senior staff and sometimes it’s their first time putting in a line and.... that’s the whole medical school thing that they leave somebody on call that might be a first-year resident and they don’t have the skills needed to be able to supervise 20 critically ill people overnight.” (Registered Nurse)

Some physicians expressed concern about contacting the senior on-call physician, especially during the night shift. Others expressed concern about the exchange of patient information, especially at shift change.

“When I listen to the handover between nursing staff I am reminded how they don’t really know what’s going on with the patient, they don’t really know the primary diagnosis or associated problems and that is partly our fault because we don’t communicate these clearly.” (Physician)

Nurse leaders expressed concerns about the lack of a team leader, and the challenges that exist in identifying the most responsible physician. Some expressed frustration with colleagues who fail to act as a team.

“There isn’t a single individual who has comprehensive knowledge of the patient. I see aspects of care that are contra-indicated because of inadequate communication between teams. So one team will do something that is in direct opposition to something another team is doing.” (Nurse Manager)

Although it appeared that teamwork failures were more likely to contribute to poor safety outcomes, several participants noted the degree to which effective teamwork contributes to the safety culture.

“...as a positive, I think our peers looking after each other like, you know, even though it is stressful, we can’t help each other all the time and that but I think really we’re there for each other and, you know, like are you okay, like is there anything I can do for you, that type of thing. And that counts a lot when you’re having a day that you think the whole world’s falling apart, to know that your partner over there is kind of watching you.” (Registered Nurse)

“...the most important thing about making timely decisions in complex situations is trust between the people that are on the team.... that everyone knows their role and can deliver their part effectively. That gives us the ability to parallel process and be in three places at once.” (Physician)

Scope and Standards of Practice

It was evident from the research that the stakeholder groups have divergent perspectives on issues related to practice standards, including scope of practice (a role that is reflected in the knowledge base of the profession) and practice standards (the application of knowledge within parameters defined by legislation). All four groups raised concerns about professional accountability, variation in physician practices, and adherence to policies and procedures (e.g. hand-washing, infection control, and restraints). However, concerns about enactment of the practice standards and the consequences varied across the four groups. Nurse leaders and Registered Nurses expressed concern about nurses acting “beyond” their scope of practice.

“One thing I find harder here in a teaching hospital is there’s a lot of unwritten and unspoken rules that nurses will go ahead and do this and that and this and that when really they probably shouldn’t be. And what happens is the physicians abdicate it after a while and they expect it. Then if something were to go wrong I think they’d be fired for practicing outside of their scope without order sets.” (Nurse Leader)

In contrast, some physicians expressed concern that nurses do not practice to scope when enacting standardized protocols. Nurse leaders, and some of the Registered Nurses, also expressed concern that nurses can become very fixated on tasks, losing sight of their role in caring for the patient as a whole. Registered Nurses raised concerns about the frequency with which colleagues cut corners and engage in work-arounds. In contrast, physicians and Allied Health raised concerns about errors and missing information on the chart, including: missing laboratory results, transcription errors, incomprehensible handwriting, and conflicting clinical information.

Several physicians commented on the importance of understanding each other's professional role in relation to the ability to make timely decisions. Further, physicians noted the role of experienced nurses in keeping the patient safe, often acting as the patient's advocate with respect to the competence of "junior" physicians.

RESEARCH QUESTION 4

WHAT FACTORS IN THE PRACTICE ENVIRONMENT INFLUENCE ERROR/NEAR MISS DISCLOSURE AND LEARNING AND DO THESE PERSPECTIVES VARY BY PROVIDER GROUP (E.G. NURSES, PHYSICIANS ETC.)?

Good communication, respect and trust were identified by all four stakeholder groups as factors that influence error disclosure and learning. Also, all groups noted that errors are more likely to be reported when there is no fear of repercussions, and that learning is more likely to occur when the interdisciplinary team works in close proximity. In addition, they commented on the importance of interdisciplinary rounds for learning, but noted how time-consuming these are in their current form (e.g. rounds can take all morning when held outside of the unit). Nurse leaders were the only group to link reporting and learning with an open and just culture in the critical care unit, as well as the importance of a consistent management approach across all professional groups. In addition, nurse leaders commented on the importance of fostering critical thinking among all staff, and of having first-hand knowledge about the skills and competencies of each staff member.

Some physicians made a link between learning and receptivity to change, as well as the importance of collaborative decision-making between nurses and physicians. In addition, some physicians expressed deep concern about the need to reconcile differences in disciplinary knowledge to develop a shared understanding of the clinical situation and potential clinical outcome.

"I think there's issues on teamwork and communication between the, you know, the multiple staff looking after the patients, in particular physician deciding issues around hand-off, there's a lot of physician hand-off that happens from staff to staff from trainee to trainee from trainee to staff, consultants to various staff members and there can be a fair bit of degrading of information during that time and the wrong information's transmitted or something miscommunication and similarly when you're trying to deliver care in the ICU where it's often there's some strategy that you're trying to implement that's more complicated than hanging medication or putting up in a tube. There are issues around lack of communication and complicated strategies."
(Physician)

Further, physicians commented on the medical culture in which residents learn new skills, commonly referred to as the "see one, do one, teach one" method of training. In contrast, nurse leaders commented on annual and extensive mandatory nurse certification and re-certification programs.

Nurse leaders and Registered Nurses were the only groups to identify the importance of feedback on errors for learning and future reporting. Both groups also discussed the role of managers in providing supportive feedback when errors occur and in encouraging learning and growth among nursing staff. Further, both Registered Nurse and nurse leader groups discussed the importance of having strong clinical nursing leadership in the critical care unit – someone who acts as the "go-to" and who can provide information and expertise when needed.

RESEARCH QUESTION 5

WHAT LEADERSHIP BEHAVIOURS CAN BE ENACTED TO CREATE A PRACTICE ENVIRONMENT THAT PROMOTES A CULTURE OF PATIENT SAFETY AND LEARNING?

To understand potential improvements in leadership behaviors, we first asked participants to identify the leaders in critical care. While all four groups identified clinical knowledge and “hands-on” practice as required leadership competencies, there were differences in perceptions about whether leadership is distributed among all professionals, or whether it is role-specific. For instance, Allied Health and some nurse leaders suggested that “everyone” who cares for the patient is a leader, and that leadership for safe practice is enacted by those closest to care at the patient’s bedside. In contrast, physicians, Registered Nurses and some nurse leaders identified the suggested that the leader is the charge nurse – the most senior nurse who runs the unit on the day shift and who is most knowledgeable about practice setting realities.

“Well all the units have their clinical leader which would be I would think for the most part most people look at them as someone who is running the unit even though the manager is present. Clinical leader is the one that can control the whole situation. It would have to be someone that the people do respect and to go with what she said the knowledge base and what not. So ultimately it’s the clinical leader from day to day and then as things roll down you get your charge nurse and stuff but the clinical leader is pretty much looked upon as the leader of the unit.” (Registered Nurse)

In terms of leadership improvement, focus group participants recognized the need to involve front-line staff in decision-making, purchasing of new equipment, quality improvement activities, and debriefing of critical incidents. Nurse leaders identified the need to develop local patient safety expertise and leaders, and to provide support for error analysis and performance feedback. Physicians recommended the use of simulation and drills to improve skills, and increased participation at morbidity and mortality rounds. Physicians were also interested in increased capacity and support for the analysis of utilization data. Allied Health recommended more frequent, but shorter rounds, and simpler reports for clinical information. Registered Nurses recommended more opportunities to share knowledge, including specific rounds for patient safety and the creation of a unit-based quality and safety council.

All four groups also linked opportunities for increased resources, including increased nursing and allied health professional staffing, enhanced orientation and in-service education, decreased workload, standardized equipment, increased clinical support at the bedside, and increased funding for innovation and technological support. Nurse leaders, Registered Nurses and physicians suggested increased adherence to protocols and standards as well as development of greater insight into the skills and expertise of each provider.

Data were shared with expert reviewers to identify additional opportunities for leadership to promote a culture of patient safety and learning. Of particular interest to the expert reviewers was the issue of nurses being burdened by having to give support and mentoring to junior nurses and physicians. It was noted that most often, the senior nurse is assigned the most complex patients in addition to mentoring responsibilities and to being the go-to resource. In addition, concerns were expressed about the need to balance the tension between expanding scope of practice and professional accountability.

DISCUSSION

The goal of this research was to explore the perceptions of multiple direct care providers (e.g. nurses, physicians, Allied Health and nurse leaders) in order to maximize knowledge about critical care teamwork and the role of nursing leaders in transforming the safety culture. There was substantial overlap between the four provider groups with respect to the perceived threats to patient safety. Consistent with Reason's Organizational Accident Model¹⁰, findings from this research indicate considerable concern about the contribution of latent factors to patient safety in the critical care practice environment. Workload, skill mix, availability of equipment and supplies, number of beds, staff turnover, the size and cleanliness of the physical space, and technological supports were described as some of the factors that influence the delivery of safe care. Findings also indicate concern about a numbers of factors that influence the delivery of safe care at the "sharp" end of care¹⁰. Examples of threats to patient safety at the interface between providers and patients include increased patient acuity, rapid throughput, strain on experienced nursing staff, missing patient information, noise, cultural literacy, and rapidly changing clinical knowledge and skills.

A key theme emerging from this research is the pervasive and uncomfortable tension between patient safety threats that are linked to provider knowledge and experience, and those linked to workplace conditions. Further, teamwork and scope and/or standards of practice emerged as both a threat to patient safety and as an opportunity to enhance patient safety outcomes. There was agreement among the provider groups that improvements were needed in interdisciplinary communication, increased respect and value for professional contribution, greater understanding of the roles and responsibilities of the team members, and shared mental models of patient goals. In addition, substantial work is required to clarify scope of practice, practice standards, competencies, and skill base of team members in the context of professional accountability.

GENERALIZABILITY AND LIMITATIONS

Study findings provide a detailed description of the threats to patient safety in the critical care practice environment. When early findings from this research were discussed informally and formally with nurses and other professionals and with critical care experts, they seemed to resonate with their settings and circumstances. We are therefore reasonably confident that these findings characterize many critical care settings.

DISSIMINATION OF RESULTS

The results of this study have been presented at a number of conferences, and several papers for publication are in progress. Presentations include:

Qualitative inquiry and patient safety: Developing a deeper understanding of what we say, what we do, and why it matters. (with L. Jeffs, S. Espin, & D. Affonso). Patient Safety Research Shaping the European Agenda, Porto, Portugal. September 2007

Qualitative inquiry and patient safety: developing a deeper international nursing research congress focusing in evidence-based practice. (with L. Jeffs, S. Espin, & K. MacMillan), Sigma Theta Tau 18th International Nursing Research Congress, Vienna, Austria. July 2007

Dealing with the unexpected: How critical care nurses keep patients safe. International Council for Nurses (with L. Jeffs, R. Baker, D. Doran, & L. McGillis Hall). Yokohama, Japan. Oral presentation by L. Jeffs. May 2007

Changing patient safety culture: Who will lead the way? Canadian Nurses Association Nursing Leadership: Key to Health System Effectiveness Conference. Ottawa, Ontario. February 2007

Leadership for patient safety culture and learning. (with L. Jeffs, Baker, D. Doran, & L. McGillis Hall). The Canadian Health Services Research Foundation Conference on Sustaining Primary Healthcare Renewal, Vancouver, British Columbia, Canada. September 2006

ADDITIONAL RESOURCES

Additional information about this study can be obtained from Dr. Deborah Tregunno, Assistant Professor, York University School of Nursing.

FUTURE RESEARCH

The research described in this report will contribute substantially to the development of a program of research directed at improving patient safety culture and outcomes in critical care. This research focused uniquely on critical care practice in teaching hospitals and findings may not apply to the same extent in community hospitals. More research is needed to determine whether the issues identified in this study also apply in other sectors. In addition, the perspective of patients and families were not explored; further research is required to understand the perspective of this stakeholder group.

Other questions to be explored through subsequent research include: 1) What supports are needed for expert critical care nurses who experience burden due to the need to support junior nurses and junior physicians? 2) What changes are needed to promote understanding of professional roles and interdisciplinary teamwork in critical care? 3) What information and supports do clinical leaders (i.e. expert nurses in charge on daily basis) need to help them make decisions that promote the delivery of safe care? 4) How do direct care providers learn to develop a more comprehensive understanding of their work environment and manage the paradoxes of accountability in ways that will keep the operating point safe?

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